

In the Claims:

Please amend the claims as follows:

- 1 1. (Currently Amended) A display controller for providing a luminance value to a
2 display comprising:
- 3 an original gamma correction mapping table containing entries describing
4 a default luminance value to be provided to said display for a
5 magnitude of a video input signal, said video input signal providing a
6 default pointer to said default luminance values indicative of said
7 magnitude;
- 8 a transformed gamma correction mapping table containing entries
9 describing transformed luminance values to be provided to said display
10 for said magnitude of said video input signal, said video input signal
11 providing a transformed pointer to said transformed luminance values
12 indicative of said magnitude,
- 13 a gamma correction transform circuit that receives a new contrast signal
14 and a new brightness signal, tests if the new contrast signal and the
15 new brightness signal are respectively equivalent to a default contrast
16 signal and a default brightness signal wherein:

17 if the new contrast signal is equivalent to the default contrast
18 signal and the brightness signal is equivalent to the
19 default brightness signal, said a gamma correction
20 transform circuit is in communication with said default
21 gamma correction mapping table to designate the default
22 gamma correction mapping table for determining said
23 luminance values for said display,

24 if the new contrast signal is not equivalent to the default
25 contrast signal and/or the brightness signal is not
26 equivalent to the default brightness signal, said gamma
27 correction transform circuit transforms entries of said
28 default gamma correction mapping table as a function of
29 the contrast signal and the brightness signal, wherein
30 said gamma correction transform circuit is in
31 communication with said transformed gamma correction
32 mapping table to store said entries to said transformed
33 gamma correction mapping table.

34 ~~in communication with the original gamma correction mapping table to~~
35 ~~receive said entries and connected to receive a contrast signal and a~~
36 ~~brightness signal and from said contrast signal and brightness signal~~
37 ~~transform said entries to transformed luminance values; and~~

38 ~~a transformed gamma correction mapping table in communication with the~~
39 ~~gamma correction transform circuit to receive the transformed~~
40 ~~luminance values, said gamma correction mapping table connected to~~
41 ~~receive a video signal whereby said video signal provides a pointer to~~
42 ~~said luminance values.~~

1 2. (Original) The display controller of claim 1 wherein the gamma correction
2 transform circuit executes the function:

3
$$G_new(i) = G_orig((i * a) + b)$$

4 where:

5 *i* is a counter representing potential magnitude values of the
6 video signal,

7 *G_{new}(i)* is the transformed value of the luminance value for an
8 *i*th magnitude,

9 *a* is a magnitude of the contrast signal, and

10 *b* is a magnitude of the brightness signal.

1 3. (Original) The display controller of claim 1 wherein the gamma correction
2 transform circuit executes the function:

3 $G_new(i) = G_orig(C_i)$

4 where:

5
$$\begin{array}{l|l} C_i = b & i = 0 \\ C_i = C_{i-1} + a & i > 0 \end{array}$$

6 C_i is a pointing variable to the luminance values in the original
7 gamma correction mapping table,

8 i is a counter representing potential magnitude values of the
9 video signal,

10 a is a magnitude of the contrast signal, and

11 b is a magnitude of the brightness signal.

1 4. (Original) The display controller of claim 1 wherein the gamma correction
2 transform circuit is a microcontroller.

1 5. (Original) The display controller of claim 4 wherein the microcontroller executes a
2 program process that performs the function:

3 $G_new(i) = G_orig((i * a) + b)$

4 where:

i is a counter representing potential magnitude values of the
video signal,

G_{new}(i) is the transformed value of the luminance value for an
*i*th magnitude,

a is a magnitude of the contrast signal, and

b is a magnitude of the brightness signal.

6. (Original) The display controller of claim 4 wherein the microcontroller executes a
program process that performs the function:

$$G_{new}(i) = G_{orig}(C_i)$$

where:

$$\begin{array}{l} C_i = b \quad | \quad i = 0 \\ C_i = C_{i-1} + a \quad | \quad i > 0 \end{array}$$

C_i is a pointing variable to the luminance values in the original
gamma correction mapping table,

i is a counter representing potential magnitude values of the
video signal,

a is a magnitude of the contrast signal, and

11 *b is a magnitude of the brightness signal.*

1 7. (Original) The display controller of claim 4 wherein the original gamma correction
2 mapping table is digital data stored in a memory.

1 8. (Original) The display controller of claim 7 wherein the transformed gamma
2 correction mapping table is digital data stored in the memory.

1 9. (Original) A display control system for providing luminance values to a display
2 comprising:

3 a microcontroller connected to receive a video signal, a contrast signal,
4 and a brightness signal; and

5 a memory in communication with the microcontroller to retain default
6 gamma correction data and transformed gamma correction data;

7 said microcontroller executing a program process comprising the steps of:

8 receiving a new contrast signal,

9 receiving a new brightness signal,

10 testing if the new contrast signal and the new brightness signal
11 are respectively equivalent to a default contrast signal and a
12 default brightness signal,

13 if the new contrast signal is equivalent to the default contrast
14 signal and the brightness signal is equivalent to the default
15 brightness signal, designating the default gamma correction
16 mapping table for determining a luminance value for said
17 display,

18 if the new contrast signal is not equivalent to the default contrast
19 signal and/or the brightness signal is not equivalent to the
20 default brightness signal, transforming the default gamma
21 correction mapping table as a function of the contrast signal
22 and the brightness signal,

23 storing the transformed gamma correction mapping table to the
24 memory, and

25 if the new contrast signal is equivalent to the default contrast
26 signal and the brightness signal is equivalent to the default
27 brightness signal, mapping the video signal to determine the
28 luminance level from the default gamma correction mapping
29 table,

30 if the new contrast signal is not equivalent to the default contrast
31 signal and/or the brightness signal is not equivalent to the
32 default brightness signal, mapping the video signal to

33 determine the luminance level from the transformed gamma
34 correction mapping table,

35 generating a luminance signal from the luminance level, and

36 transferring the luminance signal to the display.

1 10. (Original) The display control system of claim 9 wherein the function is:

2
$$G_new(i) = G_orig((i * a) + b)$$

3 where:

4 *i* is a counter representing potential magnitude values of the
5 video signal,

6 *G_{new}(i)* is the transformed value of the luminance value for an
7 *i*th magnitude,

8 *a* is a magnitude of the contrast signal, and

9 *b* is a magnitude of the brightness signal.

1 11. (Original) The display control system of claim 9 wherein the function is:

2
$$G_new(i) = G_orig(C_i)$$

3 where:

$$\begin{array}{l} C_i = b \quad | \quad i = 0 \\ C_i = C_{i-1} + a \quad | \quad i > 0 \end{array}$$

5 **C_i** is a pointing variable to the luminance values in the original
6 gamma correction mapping table,

7 **i** is a counter representing potential magnitude values of the
8 video signal,

9 **a** is a magnitude of the contrast signal, and

10 **b** is a magnitude of the brightness signal.

1 12. (Original) A method for providing luminance value to a display comprising the
2 steps of:

3 receiving a new contrast signal,

4 receiving a new brightness signal,

5 testing if the new contrast signal and the new brightness signal
6 are respectively equivalent to a default contrast signal and a
7 default brightness signal,

8 if the new contrast signal is equivalent to the default contrast
9 signal and the brightness signal is equivalent to the default
10 brightness signal, designating the default gamma correction
11 mapping table for determining a luminance value for said
12 display,

13 if the new contrast signal is not equivalent to the default contrast
14 signal and/or the brightness signal is not equivalent to the
15 default brightness signal, transforming the default gamma
16 correction mapping table as a function of the contrast signal
17 and the brightness signal,

18 storing the transformed gamma correction mapping table to the
19 memory, and

20 if the new contrast signal is equivalent to the default contrast
21 signal and the brightness signal is equivalent to the default
22 brightness signal, mapping the video signal to determine the
23 luminance level from the default gamma correction mapping
24 table,

25 if the new contrast signal is not equivalent to the default contrast
26 signal and/or the brightness signal is not equivalent to the
27 default brightness signal, mapping the video signal to

28 determine the luminance level from the transformed gamma
29 correction mapping table,

30 generating a luminance signal from the luminance level, and

31 transferring the luminance signal to the display.

1 13. (Original) The method of claim 12 wherein the function is:

2
$$G_new(i) = G_orig((i * a) + b)$$

3 where:

4 *i* is a counter representing potential magnitude values of the
5 video signal,

6 *G_{new}(i)* is the transformed value of the luminance value for an
7 *i*th magnitude,

8 *a* is a magnitude of the contrast signal, and

9 *b* is a magnitude of the brightness signal.

1 14. (Original) The method of claim 12 wherein the function is:

2
$$G_new(i) = G_orig(C_i)$$

where:

$$\begin{array}{l} C_i = b \quad | i = 0 \\ C_i = C_{i-1} + a \quad | i > 0 \end{array}$$

C_i is a pointing variable to the luminance values in the original gamma correction mapping table,

i is a counter representing potential magnitude values of the video signal,

a is a magnitude of the contrast signal, and

b is a magnitude of the brightness signal.

15. (Original) An apparatus for providing luminance value to a display comprising the steps of:

means for receiving a new contrast signal,

means for receiving a new brightness signal,

means for testing if the new contrast signal and the new brightness signal are respectively equivalent to a default contrast signal and a default brightness signal,

8 means for designating the default gamma correction mapping
9 table for determining a luminance value for said display, if
10 the new contrast signal is equivalent to the default contrast
11 signal and the brightness signal is equivalent to the default
12 brightness signal,

13 means for transforming the default gamma correction mapping
14 table as a function of the contrast signal and the brightness
15 signal, if the new contrast signal is not equivalent to the
16 default contrast signal and/or the brightness signal is not
17 equivalent to the default brightness signal,

18 means for storing the transformed gamma correction mapping
19 table to the memory, and

20 means for mapping the video signal to determine the luminance
21 level from the default gamma correction mapping table, if the
22 new contrast signal is equivalent to the default contrast
23 signal and the brightness signal is equivalent to the default
24 brightness signal,

25 means for mapping the video signal to determine the luminance
26 level from the transformed gamma correction mapping table,
27 if the new contrast signal is not equivalent to the default

28 contrast signal and/or the brightness signal is not equivalent
29 to the default brightness signal,

30 means for generating a luminance signal from the luminance
31 level, and

32 means for transferring the luminance signal to the display.

1 16. (Original) The apparatus of claim 15 wherein the function is:

2
$$G_new(i) = G_orig((i * a) + b)$$

3 where:

4 *i* is a counter representing potential magnitude values of the
5 video signal,

6 *G_{new}(i)* is the transformed value of the luminance value for an
7 *i*th magnitude,

8 *a* is a magnitude of the contrast signal, and

9 *b* is a magnitude of the brightness signal.

1 17. (Original) The apparatus of claim 15 wherein the function is:

2
$$G_new(i) = G_orig(C_i)$$

where:

$$\begin{array}{l} C_i = b \quad | i = 0 \\ C_i = C_{i-1} + a \quad | i > 0 \end{array}$$

C_i is a pointing variable to the luminance values in the original gamma correction mapping table,

i is a counter representing potential magnitude values of the video signal,

a is a magnitude of the contrast signal, and

b is a magnitude of the brightness signal.

18. (Original) A medium for retaining a computer program which, when executed on a computing system, executes process for providing luminance value to a display comprising the steps of:

receiving a new contrast signal,

receiving a new brightness signal,

testing if the new contrast signal and the new brightness signal are respectively equivalent to a default contrast signal and a default brightness signal,

9 if the new contrast signal is equivalent to the default contrast
10 signal and the brightness signal is equivalent to the default
11 brightness signal, designating the default gamma correction
12 mapping table for determining a luminance value for said
13 display,

14 if the new contrast signal is not equivalent to the default contrast
15 signal and/or the brightness signal is not equivalent to the
16 default brightness signal, transforming the default gamma
17 correction mapping table as a function of the contrast signal
18 and the brightness signal,

19 storing the transformed gamma correction mapping table to the
20 memory, and

21 if the new contrast signal is equivalent to the default contrast
22 signal and the brightness signal is equivalent to the default
23 brightness signal, mapping the video signal to determine the
24 luminance level from the default gamma correction mapping
25 table,

26 if the new contrast signal is not equivalent to the default contrast
27 signal and/or the brightness signal is not equivalent to the
28 default brightness signal, mapping the video signal to

29 determine the luminance level from the transformed gamma
30 correction mapping table,
31 generating a luminance signal from the luminance level, and
32 transferring the luminance signal to the display.

1 19. (Original) The medium of claim 18 wherein the function is:

2
$$G_new(i) = G_orig((i * a) + b)$$

3 where:

4 *i* is a counter representing potential magnitude values of the
5 video signal,

6 *G_{new}(i)* is the transformed value of the luminance value for an
7 *i*th magnitude,

8 *a* is a magnitude of the contrast signal, and

9 *b* is a magnitude of the brightness signal.

1 20. (Original) The medium of claim 18 wherein the function is:

2
$$G_new(i) = G_orig(C_i)$$

3 where:

4
$$\begin{array}{l|l} C_i = b & i = 0 \\ C_i = C_{i-1} + a & i > 0 \end{array}$$

5 **C_i** is a pointing variable to the luminance values in the original
6 gamma correction mapping table,

7 **i** is a counter representing potential magnitude values of the
8 video signal,

9 **a** is a magnitude of the contrast signal, and

10 **b** is a magnitude of the brightness signal.

21. (Original) The medium of claim 18 wherein said medium is selected from the program storage medium consisting of random access memory, read only memory, magnetic storage devices, and optical storage devices.